

REMARKS/ARGUMENTS

Claims 1-10 are active with support for new Claims 8-10 found in original Claim 5 and the specification at page 4, ¶ [0008].

Table 3 in the specification is amended to correct a typographical error. Support for the change is found in the original Table 3 from PCT/JP05/03760, relevant page attached.

No new matter is added.

The claims of this application are to a thermoplastic using 3 specific components: (a) polylactic; (b) acrylic polymer; and (c) graft copolymer which is a vinyl monomer on a rubber. The thermoplastic is further defined by specific refractive index parameters satisfying the formula defined in the claims. According to the specification, e.g. page 3, paragraph 6, the selection of the particular components of the thermoplastic composition provides heat resistance, impact resistance and transparency. Further, the application provides a series of comparative data, summarized in tables 1-5 which show varying the composition such that they include no component B and/or different component C's (see table 2 and 3 compared to table 1); with or without components A or B; and all without C (see tables 4 and 5). In the specification at paragraph 87 on page 44 states that these examples show that the thermoplastic can provide a molded article having the excellent transparency, heat resistance, and impact strength as discussed earlier in the application.

In the Official Action, the Examiner has rejected the claims as being the same as what is described in WO 02/092696, Kakeda using the US equivalent for the English translation (US patent number 7,282,535). The rejection is traversed because (A) Kakeda does not provide sufficient disclosure to anticipate what is claimed and (B) the limitation of refractive indices defined in the claims is not necessarily present in what Kakeda describes.

Kakeda does describe a thermoplastic composition which can include any number of different types of polymers noting the general and specific descriptions provided in the US

patent starting in column 3 all the way through column 36. What the Examiner has done is specifically picked out of these broad disclosures components of Kakeda's thermoplastic that are the same as or appear to be very near the same as components A, B and C in the claims. The Examiner has ignored the refractive index limitation in the claims and has instead stated that that is an inherent property of the Kakeda thermoplastic absent evidence to the contrary. The legal standard for inherency requires that the prior art describe the same composition having the exact properties, in this case refractive index, as the claimed composition each and every time. If there is a single instance in which the prior art does not describe that property, the prior art cannot be considered inherent.

Applicants disagree that Kakeda anticipates the claims because the general disclosures provided by the Kakeda patent are not such that one of ordinary skill in the art would readily envision selecting the specific components A, B and C having the specific refractive indexes in the claim. Indeed, attention is drawn to Kakeda's statement in col. 30 regarding the so called "blending agent" that it can vary and "is not particularly limited." This is hardly suitable direction to specifically select the graft copolymer (C) in the claims, particularly in view of the refractive indices defined in the claims.

Further, the data provided in the application shows that some compositions which would certainly be within the broad disclosure of the Kakeda patent would not have this refractive index (see for example 2 and the comparative examples listed therein).

If each graft copolymer (C) shown in Examples 1 to 8 is employed in the composition of polylactic acid polymer (A)/acrylic polymer (B) 50/50, $(R_e - R_b)$ are -0.001 to 0.001 as shown in Table 1; therefore, R_e and R_b satisfy the formula (1) and the obtained thermoplastic resin composition thereby exhibits superior transparency.

On the other hand, if each graft copolymer (C) shown in Comparative Examples 12 and 13 is employed in the composition of polylactic acid polymer (A)/acrylic polymer (B)

50/50, $(R_c - R_b)$ are 0.45 and 0.41 as shown in Table 3; therefore, R_c and R_b do not satisfy the formula (1) and the obtained thermoplastic resin composition thereby exhibits inferior transparency.

Furthermore, if S-2001 as a graft copolymer (C) is employed in the composition of polylactic acid polymer (A)/acrylic polymer (B) 75/25 (Example 10), $(R_c - R_b)$ is 0.003 as shown in Table 1; R_c and R_b satisfy the formula (1) and the obtained thermoplastic resin composition thereby exhibits superior transparency.

On the other hand, if S-2001 is employed in the composition of polylactic acid polymer (A)/acrylic polymer (B) = 25/75 (Comparative Example 11), $(R_c - R_b)$ is -0.011 as shown in Table 3; R_c and R_b do not satisfy the formula (1) and the obtained thermoplastic resin composition thereby exhibits inferior transparency.

Kaneda do not disclose or suggest that the refractive index of composite rubber particles (graft copolymer) and the total refractive index of the thermoplastic resin (a) and the block copolymer (b) satisfy the formula (1) of the present invention. Further, objective evidence has been provided in the specification demonstrating that not of Kakeda's thermoplastic compositions would necessarily have the claimed properties.

Kaneda also do not suggest the unexpected effects of providing heat resistance, impact resistance and transparency when satisfying the formula (1) as defined in the claims.

Withdrawal of the rejection is requested.

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Allowance of all pending claims is also requested.

Respectfully submitted,

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[0077] [表3]

		比較例1	比較例9	比較例10	比較例11	比較例12	比較例13
グラフト共重合体(C)	ポリ乳酸系重合体 (A)	100	50	50	25	50	50
	アクリル系重合体 (B)		50	50	75	50	50
	S-2005	15					
	S-2001				15		
	SRK-200						
	W-450A						
	FM-50						
	IM-808						
	KM-355P						
	M-1						
生分解性強化剤	C-102					15	15
	C-223						
	アラミド-150			15			
	ヤマト工業強度 (kJ/m ²)	23.4	2.1	2.2	5.7	1.9	22.2
	全光透過率 (%)	70.3	92.7	91.1	52.2	36.4	35.5
	HAZE (%)	44.0	5.4	7.6	88.0	87.6	89.5
	荷重たわみ温度 (°C)	52.6	64.4	60.7	74.5	62.7	62.3
	Rab	1.449	1.469	1.469	1.48	1.469	1.469
	Rc	1.464	—	—	1.469	1.514	1.51
	Rc-Rab	0.015	—	—	-0.011	0.045	0.041

[0078] (製造例2) プタジエン/アクリル系ゴムグラフト共重合体(M-2)の製造

(1) プタジエン/アクリル系ゴム重合体ラテックス(b1)の製造

以下の物質を70Lオートクレープに仕込み、昇温して49℃となった時点で、レッドックス系開始剤をオートクレープ内に添加し反応を開始後、更に60℃まで昇温した。